AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (currently amended): A method for controlling the top width of a trench, comprising the steps of :

providing a substrate, having a trench formed therein;

forming a conductive layer in a portion of the trench;

forming an interval layer in a portion of the trench, ~~which in~~ wherein the interval layer ~~in~~ is formed over the conductive layer;

forming a sacrificial layer on the sidewall of a top portion of the trench and on ~~over~~ the interval layer;

etching the sacrificial layer to remove a portion of the sacrificial layer on the interval layer;

removing the interval layer~~, exposing~~ to expose the ~~underlying~~ sidewall of the trench between the remaining sacrificial layer and the conductive layer; and

oxidizing the sacrificial layer and the exposed sidewall of the trench to form a first silicon dioxide layer.

Claim 2 (original): The method according to claim 1, wherein the substrate is a single crystal silicon substrate.

Claim 3 (original): The method according to claim 1, wherein the step of forming the conductive layer further comprises depositing the conductive layer over the substrate and in the trench and etching back the conductive layer, which in the top of the recessed conductive layer is below the surface of the substrate.

Claim 4 (original): The method according to claim 1, wherein the conductive layer is formed of polysilicon.

Claim 5 (original): The method according to claim 1, wherein the trench further comprises a capacitor.

Claim 6 (original): The method according to claim 1, wherein the interval layer is formed of TEOS.

Claim 7 (currently amended): The method according to claim 1, wherein the steps of forming the interval layer further comprises depositing the interval layer on the substrate and in the trench and etching back the interval layer, ~~which in~~ wherein the top of the interval layer is below the surface of the substrate.

Claim 8 (canceled)

Claim 9 (original): The method according to claim 1, wherein the sacrificial layer is formed of polysilicon.

Claim 10 (original): The method according to claim 1, wherein the depth of the trench is between 5000nm~9000nm.

Claim 11 (withdrawn): A method for controlling the upper width of a trench, comprising :

providing a substrate, further comprising a trench;

forming a conductive layer in a portion of the trench;

forming [[a]] an interval layer in a portion of the trench, where in the interval layer is over the conductive layer;

forming a shield layer on the sidewall of the trench over the interval layer;

removing the interval layer, exposing the sidewall of the trench over the conductive layer; and

oxidizing the exposed trench sidewall using the shield layer as a mask.

Claim 12 (withdrawn): The method according to claim 11, wherein the substrate is a single crystal silicon substrate.

Claim 13 (withdrawn): The method according to claim 11, wherein the step of forming the conductive layer further comprises depositing the conductive layer over the substrate and in the trench and etching back the conductive layer, wherein the top of the recessed conductive layer is below the surface of the substrate.

Claim 14 (withdrawn): The method according to claim 11, wherein the conductive layer is formed of polysilicon.

Claim 15 (withdrawn): The method according to claim 11, wherein the trench further comprises a capacitor, and the conductive layer is used as the top electrode.

Claim 16 (withdrawn): The method according to claim 11, wherein the interval layer is formed of TEOS.

Claim 17 (withdrawn): The method according to claim 11, wherein the step of forming the interval layer further comprises depositing the interval layer on the substrate and in the trench and etching back the interval layer, ~~in which~~ wherein the top of the interval layer is below the surface of the substrate.

Claim 18 (withdrawn): The method according to claim 11, wherein the method of forming the shield layer further comprises conformally depositing the shield layer on the interval layer and etching back the shield layer to form the shield layer on the sidewall of the trench over the interval layer.

Claim 19 (withdrawn): The method according to claim 11, wherein the shield layer is formed of silicon nitride.

Claim 20 (withdrawn): The method according to claim 11, wherein the depth of the trench is between 5000nm~9000nm.

Claim 21 (currently amended): A method for controlling the upper width of a trench, comprising:

providing a substrate, further comprising a trench;

forming a conductive layer in a portion of the trench;

forming [[a]] an interval layer in a portion of the trench, where in the interval layer is over the conductive layer;

forming a protective layer on the sidewall of the trench over the interval layer;

removing the interval layer, exposing the sidewall of the trench over the conductive layer; and

oxidizing the trench sidewall, wherein the top portion of the trench is protected by the protective layer from oxidizing.

Claim 22 (new): The method according to claim 1, further comprising:

forming a second silicon oxide layer on the first silicon oxide layer, wherein the first and second silicon oxide layers act as a collar dielectric layer;

depositing an upper conductive layer on the second silicon oxide layer;

recessing the second silicon oxide layer; and

etching the collar dielectric layer to expose a portion of the upper conductive layer adjacent to the sidewall of the trench.